

Amendments to the Claims

The following listing of claims replaces all prior versions of the claims and all prior listings of the claims in the present application.

Claims 1-13 (canceled)

Claim 14 (previously presented): A pneumatic tire for a vehicle wheel, comprising:

a carcass;

a tread band;

sidewalls;

beads for anchoring the tire on a rim of the wheel; and

a belt structure between the carcass and the tread band;

wherein the tread band comprises grooves on a surface of the tread band;

wherein the tread band is disposed in a radially-outer position relative to the carcass;

wherein a fiber-reinforced elastomeric intermediate layer is disposed between the belt structure and the tread band,

wherein the elastomeric intermediate layer comprises, in cross-section, two edge portions thicker than a central portion,

wherein each edge portion comprises substantially-constant thickness,

wherein the edge portions are both greater than or equal to about 25% thicker than the central portion, and

wherein the edge portions are both less than or equal to about 75% thicker than the central portion.

Claim 15 (previously presented): The tire of claim 14, wherein the edge portions are both about 33% thicker than the central portion.

Claim 16 (currently amended): A pneumatic tire for a vehicle wheel, comprising:

- a carcass;
- a tread band;
- sidewalls;
- beads for anchoring the tire on a rim of the wheel; and
- a belt structure between the carcass and the tread band;

wherein the tread band comprises grooves on a surface of the tread band;

wherein the tread band is disposed in a radially-outer position relative to the carcass;

wherein a fiber-reinforced elastomeric intermediate layer is disposed between the belt structure and the tread band,

wherein the elastomeric intermediate layer comprises, in cross-section, two edge portions thicker than a central portion,

wherein the elastomeric intermediate layer further comprises a width,

wherein the edge portions each comprise about 2/7ths of the width, and

wherein the central portion comprises a remaining about 3/7ths of the width.

Claims 17-24 (canceled)

Claim 25 (currently amended): The tire of claim 14, wherein the elastomeric intermediate layer further comprises a compound material and short reinforcing fibers.

Claim 26 (currently amended): The tire of claim [[15]] 25, wherein the short reinforcing fibers comprise an aramid polymer.

Claim 27 (currently amended): The tire of claim [[15]] 25, wherein the short reinforcing fibers are oriented at an angle of substantially 0° with respect to an equatorial plane of the tire.

Claim 28 (currently amended): The tire of claim [[15]] 25, wherein the compound material comprises one or more of natural rubber, isoprene rubber, emulsion-polymerized styrene butadiene rubber, solution polymerized styrene butadiene rubber, and butadiene rubber.

Claim 29 (currently amended): The tire of claim [[15]] 25, wherein a concentration of the short reinforcing fibers in the compound material is greater than or equal to about 5 phr and less than or equal to about 15 phr.

Claim 30 (currently amended): The tire of claim [[15]] 25, wherein a concentration of the short reinforcing fibers in the compound material is greater than or equal to about 7 phr and less than or equal to about 11 phr.

Claim 31 (currently amended): The tire of claim 14, wherein the elastomeric intermediate layer is incorporated into the tread band prior to vulcanization of the tire.

Claim 32 (currently amended): The tire of claim ~~[[15]]~~ 25, wherein the compound material comprises greater than about 50% natural rubber.

Claim 33 (currently amended): The tire of claim ~~[[15]]~~ 25, wherein the compound material comprises ~~a concentration of~~ carbon black in an amount greater than or equal to about 20 phr and less than or equal to about 80 phr.

Claim 34 (currently amended): The tire of claim 14, wherein the belt structure comprises at least ~~[[one]]~~ two layers of rubberized fabric comprising cords,
wherein the cords of a first layer crisscross ~~each other~~ the cords of a second layer, and
wherein the cords of the first and second layers are angled with respect to an equatorial plane of the tire.

Claim 35 (currently amended): The tire of claim 14, wherein the tire does not include, between the belt structure and the tread band, a layer of rubberized fabric with longitudinal reinforcing cords lying at an angle of substantially 0° with respect to an equatorial plane of the tire.

Claim 36 (currently amended): The tire of claim 14, wherein the tire excludes, between the belt structure and the tread band, one or more of a rubber sheet[[,]] a zero-degree layer, and ~~an~~ a tread underlayer, or a zero-degree layer and a tread underlayer.

Claim 37 (previously presented): The tire of claim 14, wherein the elastomeric intermediate layer is an only layer placed between the belt structure and the tread band.

Claim 38 (currently amended): The tire of claim 16, wherein the elastomeric intermediate layer further comprises a compound material and short reinforcing fibers.

Claim 39 (previously presented): The tire of claim 38, wherein the short reinforcing fibers comprise an aramid polymer.

Claim 40 (previously presented): The tire of claim 38, wherein the short reinforcing fibers are oriented at an angle of substantially 0° with respect to an equatorial plane of the tire.

Claim 41 (previously presented): The tire of claim 38, wherein the compound material comprises one or more of natural rubber, isoprene rubber, emulsion-polymerized styrene butadiene rubber, solution polymerized styrene butadiene rubber, and butadiene rubber.

Claim 42 (previously presented): The tire of claim 38, wherein a concentration of the short reinforcing fibers in the compound material is greater than or equal to about 5 phr and less than or equal to about 15 phr.

Claim 43 (previously presented): The tire of claim 38, wherein a concentration of the short reinforcing fibers in the compound material is greater than or equal to about 7 phr and less than or equal to about 11 phr.

Claim 44 (currently amended): The tire of claim 16, wherein the elastomeric intermediate layer is incorporated into the tread band prior to vulcanization of the tire.

Claim 45 (previously presented): The tire of claim 38, wherein the compound material comprises greater than about 50% natural rubber.

Claim 46 (currently amended): The tire of claim 38, wherein the compound material comprises ~~a concentration of~~ carbon black in an amount greater than or equal to about 20 phr and less than or equal to about 80 phr.

Claim 47 (currently amended): The tire of claim 16, wherein the belt structure comprises at least ~~[[one]]~~ two layers of rubberized fabric comprising cords,
wherein the cords of a first layer crisscross ~~each other~~ the cords of a second layer, and

wherein the cords of the first and second layers are angled with respect to an equatorial plane of the tire.

Claim 48 (currently amended): The tire of claim 16, wherein the tire does not include, between the belt structure and the tread band, a layer of rubberized fabric with longitudinal reinforcing cords lying at an angle of substantially 0° with respect to an equatorial plane of the tire.

Claim 49 (currently amended): The tire of claim 16, wherein the tire excludes, between the belt structure and the tread band, ~~one or more of a rubber sheet~~[[,]] a zero-degree layer, and ~~an~~ a tread underlayer, or a zero-degree layer and a tread underlayer.

Claim 50 (previously presented): The tire of claim 16, wherein the elastomeric intermediate layer is an only layer placed between the belt structure and the tread band.

Claims 51-74 (canceled)

Claim 75 (currently amended): [[The]] A pneumatic tire of claim 74[[,]] for a vehicle wheel, comprising:

a carcass;

a tread band;

sidewalls;

beads for anchoring the tire on a rim of the wheel; and
a belt structure between the carcass and the tread band;
wherein the tread band comprises grooves on a surface of the tread band;
wherein the tread band is disposed in a radially-outer position relative to the carcass;
wherein a fiber-reinforced elastomeric intermediate layer is disposed between the belt
structure and the tread band,
wherein the elastomeric intermediate layer comprises cross-linking resin,
wherein the elastomeric intermediate layer further comprises, in cross-section, two edge
portions thicker than a central portion,
wherein each edge portion comprises substantially-constant thickness, and
wherein the edge portions are both between about 25% to 75% thicker than the central
portion.

Claim 76 (currently amended): ~~[[The]]~~ A pneumatic tire of claim 74~~[[,]]~~ for a vehicle
wheel, comprising:

a carcass;
a tread band;
sidewalls;
beads for anchoring the tire on a rim of the wheel; and
a belt structure between the carcass and the tread band;
wherein the tread band comprises grooves on a surface of the tread band;
wherein the tread band is disposed in a radially-outer position relative to the carcass;

wherein a fiber-reinforced elastomeric intermediate layer is disposed between the belt structure and the tread band,

wherein the elastomeric intermediate layer comprises cross-linking resin,

wherein the elastomeric intermediate layer further comprises, in cross-section, two edge portions thicker than a central portion,

wherein each edge portion comprises substantially-constant thickness, and

wherein the edge portions are both about 33% thicker than the central portion.

Claim 77 (currently amended): ~~[[The]]~~ A pneumatic tire of claim 74~~[[,]]~~ for a vehicle wheel, comprising:

a carcass;

a tread band;

sidewalls;

beads for anchoring the tire on a rim of the wheel; and

a belt structure between the carcass and the tread band;

wherein the tread band comprises grooves on a surface of the tread band;

wherein the tread band is disposed in a radially-outer position relative to the carcass;

wherein a fiber-reinforced elastomeric intermediate layer is disposed between the belt structure and the tread band,

wherein the elastomeric intermediate layer comprises cross-linking resin,

wherein the elastomeric intermediate layer further comprises, in cross-section, two edge portions thicker than a central portion,

wherein the elastomeric intermediate layer further comprises a width,
wherein the edge portions each comprise about $2/7$ ths of the width, and
wherein the central portion comprises a remaining about $3/7$ ths of the width.

Claims 78-92 (canceled)

Claim 93 (new): The tire of claim 14, wherein the tire excludes a rubber sheet on an underside of the tread band or on an underside of an underlayer of the tread band.

Claim 94 (new): The tire of claim 16, wherein the tire excludes a rubber sheet on an underside of the tread band or on an underside of an underlayer of the tread band.

Claim 95 (new): The tire of claim 75, wherein the cross-linking resin comprises resorcinol-formaldehyde resin.

Claim 96 (new): The tire of claim 77, wherein the cross-linking resin comprises resorcinol-formaldehyde resin.

Claim 97 (new): The tire of claim 25, wherein the short reinforcing fibers comprise aramid fibers produced from poly-paraphenylene terephthalamide.

Claim 98 (new): The tire of claim 38, wherein the short reinforcing fibers comprise aramid fibers produced from poly-paraphenylene terephthalamide.

Claim 99 (new): The tire of claim 25, wherein the short reinforcing fibers comprise numerous branches or fibrils extending outwardly from a trunk portion.

Claim 100 (new): The tire of claim 38, wherein the short reinforcing fibers comprise numerous branches or fibrils extending outwardly from a trunk portion.

Claim 101 (new): The tire of claim 25, wherein the compound material comprises carbon black in an amount greater than or equal to about 50 phr and less than or equal to about 70 phr.

Claim 102 (new): The tire of claim 38, wherein the compound material comprises carbon black in an amount greater than or equal to about 50 phr and less than or equal to about 70 phr.

Claim 103 (new): The tire of claim 25, wherein the compound material comprises carbon black in an amount equal to about 60 phr.

Claim 104 (new): The tire of claim 38, wherein the compound material comprises carbon black in an amount equal to about 60 phr.

Claim 105 (new): The tire of claim 14, wherein the elastomeric intermediate layer further comprises a thickness greater than 1 mm.

Claim 106 (new): The tire of claim 16, wherein the elastomeric intermediate layer further comprises a thickness greater than 1 mm.

Claim 107 (new): The tire of claim 75, wherein the elastomeric intermediate layer further comprises a thickness greater than 1 mm.

Claim 108 (new): The tire of claim 77, wherein the elastomeric intermediate layer further comprises a thickness greater than 1 mm.

Claim 109 (new): The tire of claim 25, wherein the elastomeric intermediate layer further comprises a thickness greater than or equal to about 1.5 mm and less than or equal to about 3.0 mm.

Claim 110 (new): The tire of claim 38, wherein the elastomeric intermediate layer further comprises a thickness greater than or equal to about 1.5 mm and less than or equal to about 3.0 mm.

Claim 111 (new): The tire of claim 75, wherein the elastomeric intermediate layer further comprises a thickness greater than or equal to about 1.5 mm and less than or equal to about 3.0 mm.

Claim 112 (new): The tire of claim 77, wherein the elastomeric intermediate layer further comprises a thickness greater than or equal to about 1.5 mm and less than or equal to about 3.0 mm.

Claim 113 (new): The tire of claim 25, wherein the elastomeric intermediate layer further comprises a thickness greater than or equal to about 1.5 mm and less than or equal to about 2.0 mm.

Claim 114 (new): The tire of claim 38, wherein the elastomeric intermediate layer further comprises a thickness greater than or equal to about 1.5 mm and less than or equal to about 2.0 mm.

Claim 115 (new): The tire of claim 75, wherein the elastomeric intermediate layer further comprises a thickness greater than or equal to about 1.5 mm and less than or equal to about 2.0 mm.

Claim 116 (new): The tire of claim 77, wherein the elastomeric intermediate layer further comprises a thickness greater than or equal to about 1.5 mm and less than or equal to about 2.0 mm.

Claim 117 (new): The tire of claim 25, wherein a concentration of the short reinforcing fibers in the compound material is about 9 phr.

Claim 118 (new): The tire of claim 38, wherein a concentration of the short reinforcing fibers in the compound material is about 9 phr.